

Geothermal Program Milestones

Compiled by Jeffrey W. Adams, 2005, updated Nov-2011

- 4.5 billion years ago** – Earth accretes from solar nebula storing tremendous amounts of geothermal energy within its crustal rocks, including a geographic region that later becomes known as California.
- 1850** – California becomes part of U.S. and acquires its *Sovereign Lands* – four million acres of underlying navigable waterways and tide and submerged lands to three nautical miles offshore.
- 1853** – California acquires its *School Lands* – sections 16 and 36 in each surveyed township, and lands in lieu thereof if such sections are already encumbered.
- 1938** – California State Lands Commission (CSLC) is created.
- 1940-50s** – CSLC selects and acquires several thousand acres of lieu lands in Sonoma and Lake Counties, then conveys property to several groups from San Francisco Bay area to form hunting clubs, reserving all minerals.
- 1960** – CSLC issues first geothermal resources prospecting permit. Permit covers 40 acres near Salton Sea in Imperial County.
- 1964** – CSLC issues first geothermal lease via conversion of prospecting permits covering 535 acres near Salton Sea. Lessee drills first geothermal well, “State of California” #1, on State-owned lands.
- 1966** – CSLC issues its first geothermal prospecting permit at The Geysers.
- 1967** – State legislature passes the Geothermal Resources Act to establish framework for CSLC to lease State-owned lands for geothermal energy development.
- 1969** – First geothermal well, “DX State 4596” #1, is drilled on State-owned lands at The Geysers.
- 1971** – CSLC issues its first two leases covering 3,988 acres at The Geysers via conversion of several prospecting permits.
- 1972** – State lease supplies its first steam to geothermal power plant at The Geysers, with royalty revenue held in suspense pending court decision on steam ownership.
- 1973** – Declaratory relief complaint is filed in California Superior Court (*Harry Pariani, et al, v. State of California*) to decide steam ownership.
- 1973-74** – CSLC staff participates in a Subcommittee on Geothermal Resources for a Joint Legislative Committee on Public Domain, which examines impediments to geothermal development.
- 1976** – CSLC contracts with Lawrence Berkeley Laboratory to design, build, and test instruments to explore for abnormal heat flows beneath Clear Lake, Mono Lake, and the Salton Sea. CSLC conducts first lease sale via competitive public bidding at The Geysers, issues two leases totaling 564 acres. Total revenue from State leases at The Geysers exceeds \$1 million; production exceeds 100 billion pounds.
- 1978** – State legislature passes Geothermal Act to give CSLC greater freedom in selecting lands for leasing, and a more flexible program to promote rapid geothermal development on State-owned lands.
- 1979** – Cumulative revenue from State leases at The Geysers exceeds \$10 million.
- 1980-83** – CSLC conducts competitive lease sales at The Geysers for twelve parcels totaling 3,520 acres. All leases are later quitclaimed or terminated without becoming productive.

- 1980** – California Court of Appeals affirms ruling in *Pariani v. California* that geothermal resources underlying patented lands are reserved to the State.
- 1983** – CSLC acquires from the Federal government six undeveloped leases at The Geysers totaling 1,536 acres as lieu lands. Only two of leases covering 422 acres become productive.
- 1984** – CSLC contracts with Earth Science Division of Lawrence Berkeley Laboratory to design a computer database, conduct studies on geology and reservoir behavior, and develop computer simulation models for The Geysers. Annual revenue from State leases at The Geysers peaks at \$12.4 million. Parcel of State-owned lands near Salton Sea becomes site of well “State 2-14”, a deep, scientific drilling project sponsored by U.S. Dept. of Energy as part of its U.S. Continental Scientific Drilling Program.
- 1985** – CSLC acquires from the Federal government two undeveloped leases at The Geysers totaling 2,898 acres as lieu lands. Neither lease becomes productive.
- 1987** – Steam production from State leases at The Geysers peaks at 64 billion pounds for year.
- 1988** – Well “State 2-14” near Salton Sea reaches its total depth of 10,564 feet.
- 1989** – California Energy Commission convenes hearings on decline of The Geysers field, and CSLC becomes part of resultant Technical Advisory Committee.
- 1992** – CSLC issues negotiated lease on 80-acre parcel of Dept. of Fish and Game lands at the Salton Sea field. Lease becomes part of a producing geothermal unit but surface occupancy is prohibited.
- 1993** – Cumulative revenue from State leases at The Geysers exceeds \$100 million, and cumulative production from State leases exceeds 1 trillion pounds.
- 1994** – CSLC issues two negotiated leases covering 999 acres at The Geysers that had originally been under lease in early 1980s.
- 1995** – CSLC issues a negotiated subsurface lease covering 440 acres at The Geysers.
- 1999** – CSLC approves assignment of four State leases totaling 4,411 acres at The Geysers from Unocal Geothermal to Calpine Corporation. Calpine consolidates operations by acquiring Unocal’s leases and Pacific Gas & Electricity Company’s generating facilities. For royalty purposes, CSLC approves new steam valuation method based on a percentage of the value of electricity generated.
- 2000** – CSLC approves enlargement of State lease at the Salton Sea field to 615 acres.
- 2004** – CSLC issues a negotiated lease covering 1,657 acres at The Geysers.
- 2006** – CSLC issues first geothermal prospecting permit in more than 20 years, covering 640 acres in Inyo Co.
- 2007** – CSLC staff begins processing applications for new prospecting permits north of The Geysers, and a nomination for a competitive lease sale in the Truckhaven area, west of Salton Sea.
- 2010** – Prospecting permit in Inyo County expires without any exploration, and nomination for a competitive lease sale in the Truckhaven area is put on hold.
- 2011** – CSLC splits State lease at Salton Sea into 80-acre and 535-acre leases, issues new prospecting permit in Inyo County, and considers new prospecting permits at The Geysers and new leases at the Salton Sea field and near Truckhaven.